

Claims  
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see pg 10  
Patent No.  
27557-072

Application No.: 09/982,801  
Attorney's Docket No. 027557-072  
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**AMENDMENTS TO THE CLAIMS:**

This listing of claims replaces all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

Claim 1 (currently amended): A monitoring device, for allowing a processor to monitor a value of a parameter derived from an analog signal, the monitoring device comprising:

an analog-digital converter, for producing a digital signal corresponding to the analog signal, wherein said digital signal comprises a digital signal stream, corresponding to successive measured values of the parameter;

a logic unit, for obtaining at least one value of said parameter, based on the digital signal, said logic unit being adapted for updating the value of the or each parameter contained in the register as required in response to the digital signal stream; and

an output register, accessible by the processor unit, the register containing at least one said obtained value of said parameter derived from said digital signal stream.

Claim 2 (previously presented): A monitoring device as claimed in claim 1, wherein the monitoring device further comprises means for setting a threshold value for said parameter, and for sending a signal to said processor when a parameter value contained in the output register reaches the threshold value.

Claim 3 (currently amended): A monitoring device as claimed in claim 1, wherein:  
said monitoring device is adapted for connection to a battery; and  
said parameter derived from said analog signal comprises a voltage supplied by the battery;  
said digital signal comprises a digital signal stream, corresponding to successive measured values of the battery voltage;

~~said output register contains the value of at least one output parameter derived from said signal stream; and~~

~~said logic unit being adapted for updating the value of the or each parameter contained in the register as required in response to the digital signal stream.~~

Claim 4 (original): A monitoring device as claimed in claim 3, wherein the register contains the maximum value of the battery voltage supplied over a period since the register was last accessed by the processor.

Claim 5 (original): A monitoring device as claimed in claim 3, wherein the register contains the minimum value of the battery voltage supplied over a period since the register was last accessed by the processor.

Claim 6 (original): A monitoring device as claimed in claim 3, wherein the register contains the average value of the battery voltage supplied over a fixed period.

Claim 7 (currently amended): A monitoring device as claimed in claim 1, wherein:  
~~said monitoring device is adapted for connection to a battery; and~~  
~~said parameter derived from said analog signal comprises a charging current supplied to the battery;~~

~~said digital signal comprises a digital signal stream, corresponding to successive measured values of the charging current;~~

~~said output register contains the value of at least one output parameter derived from said signal stream; and~~

~~said logic unit being adapted for updating the value of the or each parameter contained in the register as required in response to the digital signal stream.~~

Claim 8 (original): A monitoring device as claimed in claim 7, wherein the register contains the maximum value of the charging current supplied over a period since the register was last accessed by the processor.

Claim 9 (original): A monitoring device as claimed in claim 7, wherein the register contains the minimum value of the charging current supplied over a period since the register was last accessed by the processor.

Claim 10 (original): A monitoring device as claimed in claim 7, wherein the register contains the average value of the charging current supplied over a period.

Claim 11 (previously presented): A mobile communications device, comprising a monitoring device as claimed in claim 7, wherein the processor is a processor of the mobile communications device.

Claim 12 (previously presented): A mobile communications device, comprising a monitoring device as claimed in claim 3, wherein the processor is a processor of the mobile communications device.

Claim 13 (original): A mobile communications device as claimed in claim 12, wherein the register contains the maximum value of the battery voltage supplied over a period and the average value of the battery voltage supplied over a period.

Claim 14 (original): A mobile communications device as claimed in claim 13, wherein the maximum value of the battery voltage supplied over a period is updated at a first rate, and the average value of the battery voltage supplied over a period is updated at a second rate slower than the first rate.

**Claim 15 (original):** A mobile communications device as claimed in claim 13, which, in at least one mode of operation, produces an internal signal indicating that the device is transmitting, and wherein the stored maximum value of the battery voltage is updated at a first rate while said internal signal is being produced, and at a second lower rate while said internal signal is not being produced.

**Claim 16 (original):** A mobile communications device as claimed in claim 12, wherein the register contains the minimum value of the battery voltage supplied over a period and the average value of the battery voltage supplied over a period.

**Claim 17 (original):** A mobile communications device as claimed in claim 16, wherein the minimum value of the battery voltage supplied over a period is updated at a first rate, and the average value of the battery voltage supplied over a period is updated at a second rate slower than the first rate.

**Claim 18 (original):** A mobile communications device as claimed in claim 16, which, in at least one mode of operation, produces an internal signal indicating that the device is transmitting, and wherein the stored minimum value of the battery voltage is updated at a first rate while said internal signal is being produced, and at a second lower rate while said internal signal is not being produced.

**Claim 19 (original):** A mobile communications device as claimed in claim 12, which, in at least one mode of operation, produces an internal signal indicating that the device is transmitting, and wherein the register contains a first minimum value of the battery voltage supplied over a period while said internal signal is being produced, and a second minimum value of the battery voltage supplied over a period while said internal signal is not being produced.

Claim 20 (currently amended): A monitoring device as claimed in claim 1, wherein:

said monitoring device is adapted for connection to a battery; and  
said parameter derived from said analog signal comprises a temperature;  
~~said digital signal comprises a digital signal stream, corresponding to successive measured values of the temperature;~~  
~~said output register contains the value of at least one output parameter derived from said signal stream, and~~  
~~said logic unit being adapted for updating the value of the or each parameter contained in the register as required in response to the digital signal stream.~~

Claim 21 (original): A monitoring device as claimed in claim 20, wherein the register contains the maximum value of the temperature supplied over a period since the register was last accessed by the processor.

Claim 22 (original): A monitoring device as claimed in claim 20, wherein the register contains the minimum value of the temperature supplied over a period since the register was last accessed by the processor.

Claim 23 (original): A monitoring device as claimed in claim 20, wherein the register contains the average value of the temperature supplied over a fixed period.

Claim 24 (currently amended): A method of monitoring a value of a parameter derived from an analog signal, the method comprising:

producing a digital signal corresponding to the analog signal, ~~wherein said digital signal comprises a digital signal stream, corresponding to successive measured values of the parameter;~~  
obtaining at least one value of said parameter, based on the digital signal; and

storing at least one said obtained at least one value derived from said digital stream in an output register, accessible by a processor unit.

Claim 25 (original): A method as claimed in claim 24, further comprising setting a threshold value for said parameter, and for sending a signal to said processor when the value of the parameter reaches the threshold value.

Claim 26 (currently amended): A method of monitoring as claimed in claim 24, wherein: said parameter comprises a voltage supplied by a battery;

~~said digital signal comprises a digital signal stream, corresponding to successive measured values of the battery voltage; and~~

~~storing at least one said obtained value comprises storing at least one output parameter value derived from said signal stream in an said output register.~~

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Claim 27 (previously presented): A method as claimed in claim 47, wherein the register contains the maximum value of the battery voltage supplied over a period since the register was last accessed by the processor.

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Claim 28 (previously presented): A method as claimed in claim 47, wherein the register contains the minimum value of the battery voltage supplied over a period since the register was last accessed by the processor.

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Claim 29 (previously presented): A method as claimed in claim 47, wherein the register contains the average value of the battery voltage supplied over a fixed period.

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Claim 30 (previously presented): A method of monitoring as claimed in claim 24, wherein: said parameter comprises a charging current supplied to a battery;

~~said digital signal comprises a digital signal stream, corresponding to successive measured values of the charging current; and~~

~~storing at least one said obtained value comprises storing at least one output parameter value derived from said signal stream in an output register.~~

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Claim 31 (previously presented): A method as claimed in claim 48, comprising storing in the register the maximum value of the charging current supplied over a period since the register was last accessed by the processor.

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Claim 32 (previously presented): A method as claimed in claim 48, comprising storing in the register the minimum value of the charging current supplied over a period since the register was last accessed by the processor.

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Claim 33 (previously presented): A method as claimed in claim 48, comprising storing in the register the average value of the charging current supplied over a period.

Claim 34 (previously presented): A method of monitoring as claimed in claim 24, wherein: said parameter comprises a temperature;

~~said digital signal comprises a digital signal stream, corresponding to successive measured values of the temperature, and~~

~~storing at least one said obtained value comprises storing at least one output parameter value derived from said signal stream in an output register, accessible by a processor unit.~~

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Claim 35 (previously presented): A method as claimed in claim 49, comprising storing in the register the maximum value of the temperature supplied over a period since the register was last accessed by the processor.

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Claim 36 (previously presented): A method as claimed in claim 49, comprising storing in the register the minimum value of the temperature supplied over a period since the register was last accessed by the processor.

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Claim 37 (previously presented): A method as claimed in claim 49, comprising storing in the register the average value of the temperature supplied over a fixed period.

Claim 38 (previously presented): A monitoring device as claimed in claim 1, wherein said digital signal comprises a digital signal stream, and said logic unit adapted for updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

Claim 39 (currently amended): A monitoring device as claimed in claim 1, wherein the register contains the maximum value of the parameter supplied supplied over a period and the average value of the parameter supplied over a period.

Claim 40 (previously presented): A monitoring device as claimed in claim 39, wherein the maximum value of the parameter supplied over a period is updated at a first rate, and the average value of the parameter supplied over a period is updated at a second rate slower than the first rate.

Claim 41 (previously presented): A monitoring device as claimed in claim 1, wherein the register contains the minimum value of the parameter supplied over a period and the average value of the parameter supplied over a period.

Claim 42 (previously presented): A monitoring device as claimed in claim 41, wherein the minimum value of the parameter supplied over a period is updated at a first rate, and the average value of the parameter supplied over a period is updated at a second rate slower than the first rate.

Claim 43 (previously presented): A monitoring device as claimed in claim 1, wherein the register contains the maximum value of the parameter supplied over a period since the register was last accessed by the processor.

Claim 44 (previously presented): A monitoring device as claimed in claim 1, wherein the register contains the minimum value of the parameter supplied over a period since the register was last accessed by the processor.

Claim 45 (previously presented): A monitoring device as claimed in claim 1, wherein the register contains the average value of the parameter supplied over a fixed period.

Claim 46 (previously presented): A method as claimed in claim 24, comprising updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

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Claim 47 (previously presented): A method as claimed in claim 26, comprising updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

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Claim 48 (previously presented): A method as claimed in claim 30, comprising updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

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Claim 49 (previously presented): A method as claimed in claim 34, comprising updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

Claim 50 (previously presented): A mobile communications device, comprising a monitoring device as claimed in claim 20.

Claim 51 (previously presented): A mobile communications device as claimed in claim 12, said monitor monitoring a parameter derived from a second analog signal corresponding to a charging current supplied by the battery, wherein:

    said second analog signal is digitized by said analog-digital converter for producing information in said digital signal stream corresponding to successive measurements of the charging current;

    said output register contains values of output parameters derived from said digital signal stream, said values corresponding to said voltage and current measurements; and

    said logic unit is adapted for updating the value of each of the output parameters contained in the register as required in response to said digital signal stream.